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GRAIN QUALITY AS A DETERMINANT OF WHEAT IMPORT DEMAND:

The Case of Indonesia

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April 1993

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GRAIN QUALITY AS A DETERMINANT OF WHEAT IMPORT DEMAND:

The Case of Indonesia

Summary

Indonesia does not produce wheat and imports have risen rapidly over the past two decades, reaching 2.3 million m.t. in 1991. Although wheat consumption is small relative to rice and other staples produced in Indonesia, wheat is a substitute for rice and is an important source of calories. The Indonesian markets for wheat and wheat flour are highly regulated. The government controls imports, regulates output and prices for Indonesia's three flour mills, and restricts the distribution of flour to licensed distributors. As a result, the quality needs of Indonesian flour processors are not reflected in market signals.

U.S. wheat exports to Indonesia fell from 850,000 m.t. in 1983 to near zero in 1991. This reflects the importance of price to the Indonesian market. Australia has transport and price advantages in the Indonesian soft wheat market. This is the most rapidly growing segment of the market due to the rapid growth of the noodle industry. In the hard wheat market, Saudi, Turkish, and Argentinean wheat are deeply discounted. These countries now have 43 percent of the Indonesian market, compared with zero in 1980. In addition, Canadian exports, which seldom exceeded 50,000 m.t. prior to 1985, have averaged over 200,000 m.t. during the past six years.

The most important quality attributes affecting Indonesian import decisions are non-millable material, shrunkens and brokens and test weight. Each of these factors have a direct impact on milling rates and thus mill profits. Indonesian mills also complain about dockage in U.S. wheat. However, the impact of dockage on cleaning costs, the cost of disposing screenings, and wear and tear on equipment are of little concern to the mills.

Indonesia would not pay a premium for cleaner U.S. wheat. There would be no point to this since Canadian and Australian wheat, with low levels of dockage, are already sold at a discount to U.S. wheat. Given the price discounts currently offered by competitors, it is unlikely that Indonesia would purchase more U.S. wheat if it were cleaner.

GRAIN QUALITY AS A DETERMINANT OF WHEAT IMPORT DEMAND

The Case of Indonesia

Introduction

Following the civil strife of the mid-1960s, Indonesia was among the poorest countries in the world. Over the past 25 years, however, real economic growth has averaged almost 7.0 percent per annum, a rate similar to that of other East Asian countries. Although per capita income is still only $570 per year, continued strong growth could place Indonesia among the middle income countries by the end of the century.

Government policies were partially responsible for Indonesia's strong economic performance. During the oil boom of the 1970s, Indonesia periodically devalued its currency and prevented the extended periods of overvaluation that occurred in many other oil exporting countries. When oil prices declined in the 1980s, the government followed contractionary macro policies and curtailed spending. Indonesia also avoided excessive debt accumulation and until recently, its debt service ratio has been consistently low.[1]

The government has also followed a balanced strategy of agricultural, rural, and infrastructure development. Agriculture was particularly important since it is Indonesia's most important economic activity and is critical to rural poverty alleviation. Agriculture accounts for about 25 percent of GDP and 50 percent of economy-wide employment. Government policies have focused on rice, which is Indonesia's principal staple food, and have included programs to expand research, develop and rehabilitate large-scale irrigation systems, and subsidize inputs to promote the adoption of high yielding rice varieties. As a result, rice production has grown by about 4.5 percent per annum over the past twenty years and Indonesia, which was once the world's largest importer of rice, has been more or less self-sufficient since 1985.

Indonesia has government-controlled price systems for rice and several other important food commodities. These price systems are administered by BULOG, the National Logistics Agency. One objective is low and stable food prices; but unlike many other developing countries, Indonesia no longer taxes producers of staple foods. During most the 1980s, for example, rice prices have been on par with world prices.

Since 1985, the government has also followed a more outward orientated growth strategy and has implemented a series of deregulatory reforms in trade, investment, and finance. In 1985, for example, commodities subject to import licensing restrictions accounted for 68 percent of domestic manufacturing production. By 1991, that share had fallen to 32 percent. The impact of these reforms has been a much more diversified economy. Whereas oil and natural gas accounted for 82 percent of all exports and 71 percent of government revenues in 1981, these shares had both fallen to 36 percent by 1991.

[1] Indonesia's debt service ratio has risen sharply in recent years because of declining oil prices and depreciation of the U.S. dollar.

The government's deregulatory package of 1991 was the first to include substantial reforms in agriculture. Many import licensing restrictions were eliminated and the share of domestic agricultural production subject to licensing restrictions was lowered by 10 percentage points to 30 percent. Most of the commodities still subject to licensing restrictions are in the food crop sector and are controlled by BULOG. These include rice, sugar, soybeans, wheat and wheat flour, and cereal by-products.[2] Of these commodities, only sugar and soybeans are highly protected and have domestic prices that are substantially above world prices.

An Overview of the Indonesian Wheat Market

Wheat consumption accounts for only 2.5 percent of all calories consumed in Indonesia and is small relative to other food staples. The most important staples are rice, corn, and root crops, which account for 55, 9, and 7 percent, respectively, of all calories consumed. Nevertheless, wheat products are considered important food items, particularly as substitutes for rice in urban areas, and wheat plays a major role in government food policy.

Indonesia does not produce wheat and all consumption is met through imports. In the late 1960s and early 1970s, flour imports were used to meet Indonesia's imported food needs and to help control the tremendous inflationary pressures of the period. In 1971 and 1972, three flour mills were opened and imports have since been almost entirely in the form of wheat grain. Only small amount of flour are imported to meet short-term shortages or specialized needs. Grain imports, meanwhile, have climbed from 500,000 m.t. in 1972 to 1.9 million m.t. in 1989 and wheat has replaced rice as Indonesia's most important food import (Table 1). In 1991, imports jumped to 2.3 million m.t. because of a poor rice harvest.

Initially, all imports were on a grant or concessional basis from the wheat-exporting industrialized countries. Although Indonesia still imports small amounts of wheat on a concessional basis, most imports are now commercial (Table 1). PL-480 shipments to Indonesia were discontinued in 1989. Most wheat is destined for human consumption. Since 1988, however, Indonesia has also imported feed-quality wheat and in 1991, imports reached 250,000 m.t. (Table 1). Feed-quality wheat is milled for industrial flour which is used as a component of glue by the plywood industry. Following a ban on raw log exports, this industry has been booming and plywood is now Indonesia's leading export after petroleum and petroleum products. Feed-quality wheat is not used by Indonesia's small but rapidly growing animal feed industry. Feed compounders do purchase some high protein wheat and wheat gluten for binding pellets of shrimp feed.

Nearly all aspects of the wheat and wheat flour markets in Indonesia are regulated by the government. The government controls imports, regulates output and prices for Indonesia's three flour mills, and restricts the distribution of flour to licensed distributors. BULOG has had the sole authority to import wheat and wheat flour since 1972 when control was transferred from the Department of Trade. Pre-mixed flours can only be imported after obtaining a permit from the Department of Trade and with a recommendation from BULOG. Only

[2] Imports of corn, other coarse grains, and soymeal were once under BULOG's control. Corn and soymeal imports were deregulated in 1989 and 1991, respectively. Other coarse grain imports were deregulated in 1992.

specialized flours, which are not produced by Indonesian mills, can be freely imported after paying a 10 percent duty, 10 percent VAT, and BULOG fee.

Indonesia's flour mills do not actually purchase wheat, but receive a milling fee and are allowed to keep all milling by-products. The government also regulates the types of flour produced for Indonesia's domestic market. The net impact of these regulations is to provide an economic subsidy to the flour mills and to tax flour consumers. Government regulations also have a major impact on the quality and variety of wheat flour produced for the domestic market.

Policy Objectives

Since wheat is not produced in Indonesia, the government's policy objectives are oriented towards the consumer. State control over imports serves as an adjustable quota which allows the government to control prices. The principal goal is food price stability. However, the role of wheat, and consequently the policies towards it, have changed over time. In the 1970s, controlling inflation was a primary concern and substantial food imports were necessary. Since Indonesia was the world's largest rice importer in a thin world market and substantial rice purchases would have driven up world prices, wheat was imported as a substitute for rice. Wheat was also more widely traded internationally and was a cheaper calorie source. The policy, therefore, was to substitute imported wheat for rice by keeping flour prices relatively low. During the 1970s, the Jakarta wholesale price for flour rose on average by 14.8 percent per annum, compared with 17.3 percent per annum for the price of rice. Per capita wheat consumption, meanwhile, grew by 7.6 percent per annum (Table 2).

In the 1980s, Indonesia achieved a reasonable degree of price stability and became self-sufficient in rice. In addition, the balance of payments became a major constraint because of declining oil prices and the government was concerned with the expanding consumption of a staple that could not be produced domestically. As a result, the policy emphasis turned to reducing the trade deficit by restricting the growth of imported foods. Although wheat imports continued to grow during the 1980s, the increase has more or less matched the increase in population and per capita wheat consumption has remained flat at 9.5 kg. per year. The Jakarta wholesale price for flour rose by 12.2 percent per annum during the 1980s, compared with 11.2 percent per annum for the price of rice; and wheat flour prices, which were at or below comparable rice prices in the late 1970s, tended to be above rice prices in the late 1980s (Table 2).

The Flour Processing Industry

Approximately 90 percent of all flour is sold to noodle manufacturers, bakeries, and other food processors (Table 3). The largest end-user is the rapidly growing noodle industry, whose share of wheat utilized has doubled over the past decade. This reflects the growing demand for convenience foods and may indicate growing noodle consumption across a wide spectrum of the population. Although flour and processed flour products are generally considered superior goods which are consumed in urban areas by high income households, a significant portion of the Indonesian population reportedly has tried noodles. Noodles are a substitute for rice in the traditional Asian diet, while most other wheat products are associated only with Western diets. At about 17 U.S. cents per 85-gram pack, noodles are inexpensively priced and are widely available in urban food stalls.

The flour processing industry consists of small, labor intensive firms which are prevalent in the manufacture of bread, cakes and snack foods, and large mechanized companies that are prevalent in the manufacture of cakes and noodles. There are nine instant noodle companies in Indonesia with fifteen plants and a total capacity of 2.8 billion packs per year. Total production in 1990 was about 1.4 billion packs, a 60 percent increase since 1986. This makes Indonesia the third largest noodle producer in the world (Warta Ekonomi, March 1992). About half the production capacity is within the environs of Jakarta.

The noodle industry is dominated by four companies owned by Indofood, the food division of the Salim Group. The Salim Group has gradually increased its dominance over the noodle market during the past twenty years and Salim companies now account for 80 to 90 percent of total production capacity (Warta Ekonomi, March 1992). The largest producer -- PT Sanmaru Food Mfg. -- holds about 60 percent of the market and produces noodles under several brand names. The most well-known of these are Indomie (noodles in packs) and Popmie (noodles in cups).

Indonesian noodle exports, although small, have been growing rapidly and reached almost 40 million packs in 1990. Most exports are to other Asian countries. Annual exports to the United States are about 4 million packs. Indonesia also exports a variety of other processed flour products. Examples are wafers for international hotel chains, children's snack foods, and biscuits under license from a multinational food company.

The Milling Industry

In 1971 and 1972, Indonesia's first and only flour mills were opened: two on Java in the cities of Jakarta and Surabaya and one in Ujung Pandang, South Sulawesi. The Java mills are owned by PT Bogasari Flour Mills, which is 67 percent owned by the Salim Group (Warta Ekonomi, March 1992). Bogasari also manages and operates the South Sulawesi mill. This mill was opened by Prima Limited of Singapore, but in 1983 ownership was transferred to PT Berdikari Sari Utama, an Indonesian state-owned trading company.

Investments in new flour milling capacity require prior approval of the government. Approvals have been limited to the two mills owned by Bogasari and the capacity of these mills has kept pace with the growth in demand for flour. The Bogasari mill in Jakarta is reportedly the largest in the world and has received approval to expand by another 1600 tons per day in 1993. The mill consists of 10 units at the same location. The daily production capacities of Indonesia's mills are as follows:

Bogasari Jakarta:	5100 tons
Bogasari Surabaya:	3500 tons
Berdikari:	960 tons

Bogasari Jakarta is located at the deep water port of Tanjung Priok. The port can handle bulk shipments of about 40,000 m.t.[1] Shipments are off-loaded directly at the factory by pneumatic unloaders which can discharge 24,000 m.t. of grain every 24 hours. Bogasari also owns a shipping line which consists of four bulk carriers: two with a capacity of 34,000 m.t. and one each with capacities of 41,000 m.t. and 45,000 m.t.

[13] Panamex ships of 50,000-60,000 m.t. must be partially off-loaded at sea before entering the port. Panamex ships would save $5-$8 per m.t. on shipments from the United States.

Bogasari's Jakarta and Surabaya mills have 60 and 36 vertical silos, respectively, with a capacity of 3,000 m.t. per silo. Both mills also have 45,000 m.t. in bulk warehouses. Thus, Bogasari has a total storage capacity of 378,000 m.t.[2] The mills keep a 20 to 30 day stock of wheat on-hand and apparently absorb most of the short-term fluctuations in demand since down-stream flour users appear to have little storage capacity.

Bogasari is a major producer of wheat bran. The Jakarta mill has its own pelletizing factory and separate milling and cleaning equipment for milling by-products. Air classifiers separate the flours and milling by-products. Approximately 75 percent of all wheat screenings are mixed with bran and sold as animal feed. Initially, nearly all mill feed was exported. Now, approximately 50 percent is exported to Japan and South Korea while the remainder is consumed by the rapidly expanding local feed industry.

The government regulates the types of flour produced for Indonesia's domestic market. Only three types are permitted: high protein, bread flour; medium protein, all purpose flour; and low protein, biscuit flour.[3] The government also sets specifications for the protein and ash content of each type of flour (Table 4), but there are no regulations governing baking characteristics. The maximum flour extraction rate is set at 76 percent and the average extraction rate achieved by the mills is from 74 to 75 percent.[4]

High protein flour is used to make bread and snack foods that require wheat with expansive characteristics. Although usually a blend of several different hard wheats, high protein flour can be made from U.S. hard red winter (HRW) in straight runs. Low protein, biscuit flour is made from Australian standard wheat (ASW) or other soft wheats. Medium protein, all purpose flour is the only flour used in the production of noodles and is usually a blend of several different types of wheat, including both soft (primarily ASW) and hard wheats. In recent years, all purpose flour has typically been a blend of 40 percent ASW, 40 percent Canadian hard wheat, and 20 percent Saudi hard wheat.

The mills are not permitted to produce processed flour products for the domestic market. The one exception is pasta. Durum wheat, which is the primary raw material for pasta, is also unregulated and can be imported outside BULOG channels. Consequently, Bogasari converted one of its Jakarta milling units to the exclusive production of semolina in 1991 and has introduced its own line of pasta products. Currently, about 99 percent of all pasta production is exported.

Flour Distribution Channels and the Domestic Price Regime

Flour distribution channels and prices on the domestic market are highly regulated. BULOG determines the allocation of wheat to each mill and the allocation of flour to various parts of the country. All flour distributors must be approved/licensed by BULOG and have fixed

[2] Bulk soybeans are also off-loaded at Bogasari and are sometimes stored in Bogasari silos. A conveyor belt connects the factory to a nearby soybean crushing plant.

[3] As noted earlier, the mills also produce industrial flour for glue in the plywood industry.

[4] The maximum and average extraction rates differ from the extraction rate used in setting administered prices. This is explained below.

territories. Distributors consist of private traders, who are members of the Association of Sugar and Flour Distributors, and bread and noodle cooperatives. Membership in the Association of Sugar and Flour Distributors has been relatively unchanged since 1972. Members receive fixed flour allocations but can purchase the allocations of other members. Association members distribute to wholesalers and processors who are not members of cooperatives. The cooperatives handle the small-scale cottage baking industry. In addition, the largest food processors, such as those owned by Indofood, may obtain flour directly from Bogasari warehouses.

BULOG also sets ex-factory prices for flour to distributors. These prices are the same for each of the three mills, but differ by type of flour. The price differences across flour type are extremely small and do not appear to reflect the differing costs of imported wheat. BULOG also sets a standard retail price in regional markets. This price is adjusted weekly, but BULOG cannot control retail prices directly. Rather, it uses regional allocations of flour to influence prices. Even so, cheaper biscuit flour has occasionally been in short supply, resulting in retail prices which were nearly the same as those for more expensive bread flour.

Technically, the flour mills do not purchase wheat or sell flour. They are viewed simply as BULOG agents in the storage and milling of wheat. The mills receive a processing fee and are allowed to keep all milling by-products. BULOG owns the flour, but distributors actually take delivery of the flour directly from mill storage facilities after obtaining delivery instructions from BULOG and a bank letter of credit. Distributor payments for the flour cover BULOG's purchase cost of wheat, BULOG fees, various taxes and handling charges, and the milling fee (Table 5). The wholesale price of flour covers the ex-mill price, distributor transportation and handling costs, and a fixed profit margin of 2 percent.

Although the mills do not actually purchase wheat from BULOG, ex-factory flour prices are built-up from an assumed purchase price for wheat. This assumed purchase price is usually well below the landed price of imported wheat, particularly wheat purchased on commercial terms. During the 1970s, this resulted in a subsidy to flour consumers which averaged about $60 per m.t. and which was paid by the Department of Finance. In 1980, however, the government introduced a "surcharge" to offset the subsidized price of wheat. The surcharge is paid by distributors and is returned to the Department of Finance. When it is greater than the subsidy on wheat, the system results in a tax on consumers which is paid into general revenues.

In November 1988, the "assumed" mill purchase price for wheat was $86.28 per m.t. (Table 5). A rough estimate of the import price of wheat is $146 per m.t (based on the import unit value for 1988 and a small handling fee). The implied subsidy, therefore, was $59.72 per m.t., or $80.72 per m.t. on a flour equivalent basis.[5] Since the surcharge was $95.49, the tax on flour consumers was $14.77 per m.t.

In 1990, the mill fee structure was nearly unchanged from 1988 in rupiah terms; but because of devaluation of the rupiah, most prices were lower in U.S. dollar terms. The one large change was in the subsidy surcharge, which was raised from $95.49 per m.t. to $130.77 per m.t. Given an import price of $150.00 per m.t, this implies a tax on flour consumers of $39.53 per m.t. The increase in the subsidy surcharge and the resulting tax on flour

[5] The implied subsidy of $59.72 equals the landed price ($146) of wheat minus the mill purchase price ($86.28). The flour equivalent subsidy of $80.72 equals $59.72 divided by a milling rate of 0.74. This is the subsidy on the wheat required to produce one m.t. of flour.

consumers accounts for most of the increase in ex-factory flour prices that occurred between 1988 and 1990.

The administered price structure also covers mill processing costs and profits. In 1988, the total mill margin was $35.68 per ton, or 24% of the international price of wheat. In contrast, margins in the United States are about $10 per m.t., or 7 percent of the international price.[6] This extra cost is paid by Indonesian flour consumers and represents an additional tax. Finally, the mills receive revenues of about $38 per ton from the sale of milling by-products, or about $9 for every ton of wheat milled.

Impact of Government Policies on the Quality and Variety of Flour

Government policies have a major impact on the quality and variety of flour available on the Indonesian domestic market. Government controls on flour imports eliminate competition with imported flours. In addition, the administered price system is a disincentive to producing higher quality flour. The administered price is based on a fixed extraction rate which is independent of that actually achieved by the mills. If the mills lower the extraction rate in order to achieve a higher quality flour, they do not receive a premium and would actually lose money from the lower extraction rate. Furthermore, the mills have no incentive to produce a wide variety of flours since there are returns to scale from producing only three types.[7] As a result, the variety of flour available on the Indonesian market is extremely limited. The needs of flour processors are not reflected in market signals and processors cannot experiment with different types of flour for new product lines.

Flour processors also complain about the quality of Indonesian flour and its inconsistent baking characteristics. Furthermore, companies do not know which type of wheat is used in making the flour and must adjust their own production methods to the flour received. Determining flour quality is more difficult for small-scale cottage baking companies. These companies do not have testing equipment and must test the flour through trial production runs. If a product turns out poorly, they must then bear the additional cost of hiring technicians to analyze the characteristics of the flour.

Import Market Shares

In the early 1970s, the United States held 60 percent of the Indonesian market (Table 1). At that time, nearly 90 percent of the market was concessional with the United States as the principal supplier. During the latter half of the 1970s, U.S. sales to Indonesia continued to grow, but not nearly as fast as the total market. Most of the U.S. sales growth was in hard wheats (Table 6), while most of the market growth was apparently in soft wheats. As a result, the U.S. share declined to about 42 percent.

Over the same period, Australia became firmly established in the Indonesian market with a 50 percent market share. Australia has a transport cost advantage of $5-$15 per m.t. over the

[6] The U.S. margin is based on the input cost of wheat and output price of flour in the Kansas City and Minneapolis milling centers [USDA, 1991]. The U.S. milling industry is more vertically integrated than that in Indonesia and depends on processed flour products for a greater share of its profits.

[7] A single production run normally produces only two types of "patent" flours. However, the mills are technically capable of producing additional types of flour.

United States. In addition, demand within Indonesia has shifted towards noodles in which Australian Standard Wheat is a primary ingredient.

The demand for U.S. wheats continued to grow during the first half of the 1980s and reached 850,000 m.t. in 1983. Again, most of the growth was in hard wheats (Table 6). In 1985, however, U.S. sales dropped to under 200,000 m.t. and have never recovered. In 1991/92, the only U.S. sale was 7,700 m.t. of durum for Bogasari's new semolina milling unit.

The drop in U.S. market share reflects increased competition from Canada and the entry of several new countries into the Indonesian market for hard wheats. Canadian exports to Indonesia averaged under 50,000 m.t. throughout the 1970s, but have generally been above 200,000 m.t. since 1983. Countries which have recently entered the Indonesian market include Argentina, Saudi Arabia and Turkey. In 1991, these countries held 43 percent of the Indonesian commercial market compared with zero in 1980.

Grain Import Decisions

By law, BULOG has the sole authority to import wheat. In practice, the flour mills act as BULOG agents in the purchase of wheat.[8] BULOG apparently approves purchases and determines the overall quantity of wheat imported in order to achieve the price targets set by the government. This leads to a contradictory role for quality in import decisions since the objectives of BULOG differ from those of the mills. The mills do not pay for the wheat and, therefore, are most concerned with those quality attributes that impact milling operations. BULOG, on the other hand, is most interested in obtaining wheat from the cheapest source.

According to trade sources and government officials, Indonesian import decisions are based primarily on price. This is due to the country's balance of payments and budgetary concerns. When flour consumers are subsidized, low international wheat prices lead to low government outlays. When flour consumers are taxed, low international prices lead to large government revenues.

Indonesia emphasized the uncompetitiveness of U.S. wheat and the need for an Export Enhancement Program. U.S. wheat prices under commercial terms are 5 to 10 percent higher than those of competitors. CWRS is regularly offered at a discount to DNS (14 percent); and Australian wheat has a $5-$15 per m.t. transportation cost advantage. Wheat from other sources, such as Saudi Arabia and Turkey, is deeply discounted. Saudi Arabia is the cheapest source of wheat, but Saudi wheat must be blended with U.S. or Canadian wheats and is limited to about 15 percent of total purchases. Saudi wheat also requires an additional 10 hours of conditioning over DNS and CWRS because of its dryness.

Indonesia also claims that Australian and Canadian contracts are straightforward on a clean basis and that the quality of wheat received from these countries often exceeds contract specifications. For example, when Indonesia contracts for CWRS at 13.5 percent protein, it often receives a higher level of protein, even 14.5 percent. When Indonesia contracts for DNS at 14 percent protein, on the other hand, it may receive only 13.8 or 13.9 percent. Indonesia also believes that U.S. exporters add foreign material to the maximum allowed by contract specifications, even though this is now illegal.

[8] BULOG also appoints import agents for a number of other commodities under its control.

As noted earlier, wheat class, and thus protein quantity, are important in all import decisions. This is reflected in movements of market shares over the past twenty years. Of the various other wheat characteristics, only those affecting milling rates seem to have a role in import decisions. Other factors, such as intrinsic grain characteristics, are of lesser importance because of the regulated nature of the domestic flour market. Under Indonesia's administered price system, the quality needs of the baking industry and other end-users are not reflected in market signals.

The Indonesian mills listed physical attributes (non-millable material, shrunkens and brokens, other wheat classes in the case of the United States, moisture levels, and total defects) and some intrinsic characteristics (protein quality, gluten quality, falling number, and test weight) as the most important quality factors in the choice of suppliers. Grain wholesomeness was of little importance, perhaps because Indonesia had experienced few problems with wholesomeness. Of these factors, non-millable material, shrunkens and brokens, and test weight were listed as the top three most important quality attributes. These three attributes have a direct impact on the milling rate and thus mill profits. Intrinsic grain characteristics, on the other hand, would be of less importance because of the regulated nature of the flour market.

The Indonesian mills indicated that U.S. wheat is of excellent quality but complained strongly about dockage (dust) and other foreign material in U.S. wheat.[9] However, dockage was important only because of its impact on the milling rate. Other costs associated with dockage appeared relatively unimportant. These include the costs of cleaning, disposing screenings, and extra wear and tear on cleaning equipment. The mills also said that all wheat must be cleaned anyway and that the costs of cleaning Canadian and U.S. wheats were about the same.

Indonesia contracts only for standard No. 2 grade U.S. wheat and would be unwilling to pay a premium for cleaner wheat. There would be no point to this since Canadian and Australian wheat (with near zero dockage) are already sold at discounts to U.S. wheat (with dockage of 0.5 percent or above). However, the mills claimed that Indonesia would purchase more U.S. wheat if it were cleaner. The amount would depend on market conditions.[10] When price discounts from U.S. competitors are large, such as the 1991/92 marketing year, it is unlikely that Indonesia would purchase more U.S. wheat if it were cleaner. This was confirmed by government officials.

[9] As a result of Indonesian complaints, U.S. Wheat Associates has sponsored a diverter sampler for the Jakarta mill. Although the sampler has arrived at the mill, it has not yet been installed. When Indonesia does purchase wheat from the U.S., it prefers Pacific ports. It claims that wheat from the South East is adulterated with other grains.

[10] The mills could not provide an amount.

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Table 1: Indonesia Wheat Imports, 1970-1991

	1970-1974[1]	1975-1979[1]	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
	1000 Metric Tons													
TOTAL IMPORTS	616	1,019	1,445	1,367	1,485	1,712	1,435	1,327	1,692	1,628	1,845	1,901	1,817	2,346
Commercial	72	788	1,336	1,303	1,379	1,605	1,240	1,059	1,331	1,437	1,613	1,733	1,680	2,092
USA	368[2]	430[2]	736	732	806	850	726	130	168	15	61	265	259	8
Argentina	---	---	---	---	---	51	---	161	139	284	190	---	283	485
Australia	94[2]	509[2]	600	571	515	342	456	486	730	696	884	919	686	770
EC	95[2]	28[2]	---	---	26	155	---	---	24	15	---	77	31	---
Canada	42[2]	49[2]	---	---	32	207	58	282	193	233	182	219	144	417
Saudi Arabia	---	---	---	---	---	---	---	---	77	194	230	237	255	264
Turkey	---	---	---	---	---	---	---	---	---	---	66	---	---	149
Zimbabwe	---	---	---	---	---	---	---	---	---	---	---	16	---	---
Paraguay	---	---	---	---	---	---	---	---	---	---	---	---	22	---
Concessional	544	231	109	64	106	107	195	268	361	191	103	12	30	---
USA	292	154	69	49	96	82	141	268	316	191	103	---	---	---
Other	252	77	40	15	10	25	54	---	45	---	---	12	30	---
Feed Quality	---	---	---	---	---	---	---	---	---	---	129	156	106	254
EC	---	---	---	---	---	---	---	---	---	---	129	55	33	254
Turkey	---	---	---	---	---	---	---	---	---	---	---	33	---	---
Canada	---	---	---	---	---	---	---	---	---	---	---	68	73	---

[1] Data for 1970-1974 and 1975-1979 are annual averages. Data for 1970-74 include wheat flour imports converted to grain equivalent. Since 1974, imports have been almost entirely in the form of wheat grain.
[2] Data on source of imports for 1970 to 1979 include concessional sales and are not comparable to data on commercial sales in later years.

Source: 1980-1991, Office of the U.S. Agricultural Counselor and BULOG. 1970-79, S. Magiera, "The Role of Wheat in Indonesia's Food System," USDA, 1981.

Table 2: Indonesian Macroeconomic Indicators and the Consumption of Wheat

Year	Real GDP	Population	Real Per Capita GDP	CPI	Wholesale price of Rice	Wholesale Price of Wheat Flour	Per Capita Wheat Cons.
	Billion	Million	1985 U.S.$[1]	(1985=100)	--------RP Per KG----------		Kg/Yr
1970	35728	120.28	267	12.8	45	54	4.6
1971	38231	123.24	279	13.4	42	60	5.0
1972	41834	126.31	298	14.3	49	63	3.4
1973	46565	129.43	324	18.7	77	85	5.3
1974	50120	132.56	340	26.3	78	86	5.9
1975	52615	135.67	349	31.3	97	106	5.4
1976	56238	138.73	365	37.5	119	131	7.0
1977	61166	141.76	389	41.7	127	137	7.6
1978	65962	144.78	410	45.1	157	139	8.0
1979	70088	147.84	427	53.3	196	170	8.2
1980	77013	150.96	459	62.9	222	214	9.6
1981	83118	154.14	486	70.6	243	256	8.9
1982	84985	157.39	486	77.3	274	274	9.4
1983	88548	160.68	496	86.4	328	317	10.7
1984	94515	164.00	519	95.5	347	381	8.8
1985	96850	167.33	521	100.0	361	433	7.9
1986	102696	170.68	542	105.9	432	461	9.9
1987	107754	174.04	557	115.6	491	532	9.4
1988	113650	177.43	576	124.9	602	601	9.7
1989	122483	180.84	610	133.0	615	600	9.6
1990	131230	184.28	641	142.9	643	675	9.3
				GROWTH RATES			
	----------PERCENT PER ANNUM----------						
1970-80	8.0	2.30	5.6	17.3	17.3	14.8	7.6
1980-90	5.5	2.01	3.4	8.6	11.2	12.2	0.0

[1] Exchange rate in 1985 = 1110.58 Rp per U.S. dollar

SOURCE: IMF International Financial Statistics for GDP and the CPI.
FAO AGROSTAT for population.
Indonesian Central Bureau of Statistics for rice and wheat flour prices.
Per capita wheat consumption = wheat imports (Table 1) divided by population.

Table 3: Estimated Human Consumption of Wheat by End-Use

	1980	1990
	----------Percent----------	
Noodles	21	45
Bread	36	25
Biscuits/Cakes	19	10
Snack Foods	7	10
Home Use	17	10

Source: Pan Asia Research and Communications Service (1980)
and the Office of the U.S. Agricultural Counselor, Jakarta

Table 4: Indonesian Flour Classifications

Type of Flour	Proportion of Output	Protein Content	Ash Content
	----------Percent----------		
High Protein	30-35	10.5-12.0	Max 0.55
Medium Protein	60-65	9.0-10.5	Max 0.52
Low Protein	5	7.0- 9.0	Max 0.52

Table 5: Administered Price Structure for Wheat Flour

	Nov/1988	Jan/1990
	----U.S. Dollar per m.t.*----	
Landed Price of Wheat	146.00	150.00
BULOG Delivery Price:	82.48	76.42
Bank Fees and Insurance:	3.80	7.34
SUBTOTAL (Mill Purchase Price):	86.28	82.48
Flour Equivalent Price: (Based on Milling Rate of .74)	116.59	113.19
Unloading Depreciation:	.42	.38
Processing Fee:	28.37	26.29
Mill Profit:	7.31	6.78
SUBTOTAL:	152.69	146.64
Subsidy Surcharge:	95.49	130.77
BULOG Fee:	10.53	9.76
VAT and Other Taxes:	31.14	37.77
Ex-factory Price for Flour:	289.84	324.93
Average Wholesale Price:	369.46	395.63

*Exchange Rate: 1709.6 Rp = $1 US in 1988, 1845 Rp = $1 US in 1990.
Source: BULOG for 1988, U.S. Wheat Associates for 1990.

Table 6: U.S. Wheat Exports to Indonesia by Class, (Annual Averages, July/June Marketing Year)

	1971-75	1976-80	1981-85	1986-90
	----------Thousand m.t.----------			
Total U.S. Exports	314.5	533.4	699.8	278.5
Total Hard Wheats	174.8	399.7	506.7	189.1
HRS	103.7	217.0	264.9	107.7
HRW	71.1	182.7	241.8	81.5
Total Soft Wheats	139.7	133.6	193.0	89.4
SRW	25.8	1.6	10.1	20.5
WW	114.0	132.0	182.9	68.9

Source: International Wheat Council and US Department of Agriculture. Export data differ from those in Table 1.

Appendix Table 1: Quality of U.S. Wheat Shipments to Indonesia

Year	Quantity	Test Weight	Dockage	Demand Kernels	Shrunkens Brokens	Foreign Material	Total Defects	Protein[1]	Moisture
	m.t.	Pounds/Bu	----------	----------	----------	Percent	----------	----------	----------
Hard Red Spring									
1984	253974	61.4	0.86	0.2	1.9	0.3	2.4	14.1	11.1
1986	60439	61.4	1.08	0.2	1.4	0.4	2.0	14.0	11.9
1987	157530	61.1	0.85	1.2	1.4	0.4	3.0	14.0	11.5
Hard Red Winter									
1984	203849	63.1	0.67	0.1	1.4	0.2	1.6	12.5	10.0
1985	31486	64.0	0.71	0.0	1.3	0.1	1.4	8.8	9.4
1986	41859	61.6	0.62	0.2	2.6	0.3	3.1	13.0	10.9
1988	93324	62.7	0.67	0.2	1.9	0.2	2.3	11.5	10.0
1989	66576	61.1	0.70	0.4	2.6	0.3	3.3	13.0	10.6
1990	52568	60.5	0.64	0.4	2.6	0.2	3.2	12.7	10.9
Western White									
1984	225464	61.3	0.60	0.4	0.9	0.3	1.7	NA	10.5
1986	78421	61.3	0.60	0.4	1.4	0.2	2.0	10.8	10.0
1988	31500	62.0	0.86	0.4	1.4	0.3	2.1	NA	10.4
1990	71604	60.4	0.73	0.4	1.3	0.2	1.8	NA	NA

Source: U.S. Federal Grain Inspection Service
NA= Not available
[1] Excludes shipments of 34,912 mt. of Hard Red Winter in 1988 and 6,400 m.t. of Western White in 1986. Data on protein content were unavailable for these shipments.

Appendix Table 2: Indonesian Wheat Imports and Average Price by Class

Source	1990/1991 Volume m.t.	1990/1991 Price $/m.t	1991/1992 Volume m.t.	1991/1992 Price $/m.t.
AUSTRALIA	615,000	144.96	844,500	151.00
PH	65,000	152.00	32,500	151.00
UNITED STATES				
HRW	112,500	161.20		
Durum			7,700	132.00
DNS	38,750	191.62		
SRW	102,500	140.81		
CANADA				
CWRS	190,000	164.37	520,000	163.43
ARGENTINA				
Hard	280,000	147.70	280,000	149.24
SAUDI ARABIA				
HRW	250,000	155.43	270,000	143.27
TURKEY				
Hard			140,000	126.12
PARAGUAY				
Hard	20,000	186.00		
EUROPEAN COMMUNITY				
Soft	30,000	118.00		
HRW			60,000	60.25
TOTAL HARD WHEATS	956,250		1,310,200	
TOTAL SOFT WHEATS	747,500		844,500	
TOTAL IMPORTS	1,703,750		2,154,700	

SOURCE: BULOG